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NANOCOMPOSITE HYDROGELS FOR WASTEWATER TREATMENT

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Abstract. The insufficient access to drinking water is one of the most prevailing problems throughout the world. It is highly essential for future demands to bring wastewater to reusable form. Hence, water purification has been the focus and attention of many scientists and governmental agencies. The combination of adsorption and nanotechnology-oriented approach with conventional treatment methods has offered interesting benefits to treat waste water. During the last decade, hydrogels have been used as potential adsorbents for the removal of different types of water pollutants. The combination of hydrogels and nanomaterials with multifunctional framework leads to the development of hybrid hydrogels that gives synergistic effect to the novel materials. Because of their biocompatibility and ability to mix with other materials, hydrogels coupled with highly hydrated and versatile chemical groups with well-defined three-dimensional porous structure were potentially used for removal of toxic pollutants in water. This article briefly reviews the recent progress in nanobased hydrogels with particular emphasis on wastewater treatment applications.